MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2017/2018

MVR1023 – SIMULATION MODELLING

(All sections / Groups)

09 MARCH 2018
3.00 p.m. - 5.00 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 6 pages including cover page with 10 questions in Section A and 4 questions in Section B. Total marks is 40.

2. Answer **ALL 10 questions in Section A.** Each question carries 1 mark.

3. Answer **ONLY 3 out of 4 questions in Section B** and the distribution of the marks is as stated.

4. Please write all your answers in the answer booklet provided.

Section A

Answer All Questions. Total marks are 10.

1. What is "enlargement" in a scale drawing?
   A. Detail data that can be used as reference of a project
   B. A scale drawing that is smaller than the actual object
   C. A scale drawing that is larger than the actual object
   D. A 3D model dimension

2. When modelling a low poly model, there are few things that need to be considered by 3D artists. Which of the following is correct?

   I. Level of detail
   II. Purpose of detail
   III. Game Engine
   IV. Interactions
   V. Numbers of character in real-time simultaneously

   A. I, II and IV
   B. I, II, III and IV
   C. I, II, III and V
   D. All of the Above

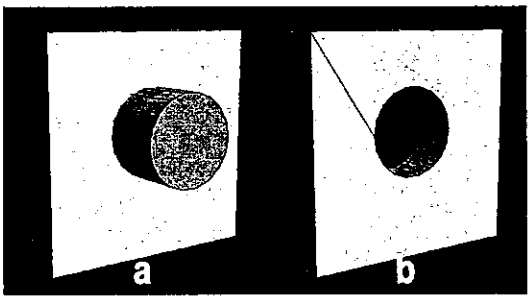

Figure 1

3. Figure 1 shows one of the Boolean operations applied to the models. Which of the following explains the operation process of Boolean as shown in b?
   A. Combination
   B. Intersection
   C. Union
   D. Subtraction

Continued .....

4. In 3D modelling, what does the term "negative space" means?
   A. The space that object occupies
   B. The space around an object
   C. The space between two vertex point of an object
   D. The space between two edges of an object

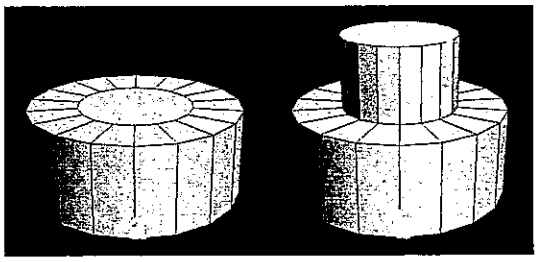

Figure 2

5. Figure 2 shows an image of a model created by using the tools available inside 3Ds Max. Which of the following tools are used to give the same result as the image shown in b?
   A. Extrude
   B. Inset
   C. Bevel
   D. Chamfer

6. What are UV's?
   A. Various types of projections to map the texture on the 3D model
   B. A 3D space in 3D model to map the texture
   C. A texture that will be assigned to 3D model in 3D software
   D. Set of coordinates that specify the location, orientation and scale of any textures applied to a 3D model

7. Primitive objects, such as sphere and cube, originally have their own mapping coordinates. Scanned, imported or hand-constructed polygonal do not have mapping coordinates until _____ is applied.
   A. UVW Map Modifier
   B. UVW editor
   C. Texture
   D. UVW Map Clear

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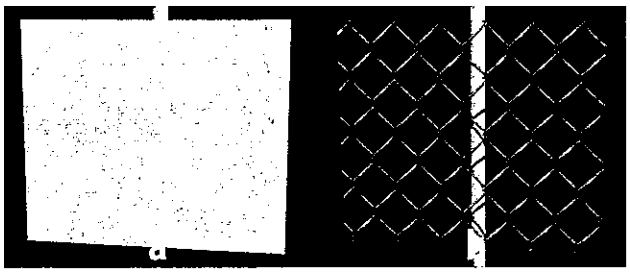

Figure 3

8. Figure 3 shows an image of a fence created by using a single plane. Which types of texture map that is used to create this 3D model?
   A. Normal Map
   B. Diffuse Map
   C. Opacity Map
   D. Specular Map

9. "When an object moves, its movement indicates the rigidity of the object". Which principle of animation does this statement belong to?
   A. Anticipating
   B. Stretch and Squash
   C. Follow Through
   D. Exaggeration

10. In unity 3D, which of the following steps are correct in creating Terrain GameObject into the scene?
   A. GameObject → Terrain
   B. GameObject → 2D Object → Terrain
   C. 3D Object → GameObject → Terrain
   D. GameObject → 3D Object → Terrain

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SECTION B

Answer only THREE (3) questions out of four. Each question carries 10 marks.

Question 1

I. In game development, low poly modelling and model management are very important and used for reasons.
   a. Why low poly modelling is important in real-time application? Discuss three (3) reasons and provide example for each reason. [6 marks]
   b. List down two (2) methods for cleaning up geometry in modelling and provide explanations. [4 marks]

Question 2

I. Describe the differences between organic and non-organic model and give example. [4 marks]

II. When modelling a high poly model, it is best to maintain quadrilateral faces and avoid N-Gons on the 3D model, especially for texture baking purposes.
   a. Define what is N-Gons. [2 marks]
   b. Discuss the advantages and disadvantages of applying N-Gons on the 3D model. [4 marks]

Question 3

I. Define what is normal map and state the type of normal that is commonly used in creating texture map. [4 marks]

II. Explain how normal map works in 3D modelling. You may use sketch to support your explanation. [6 marks]

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Question 4

I. Imagine a male character wearing a cloak and carries a big sword as a weapon. The male character then starts to swing his sword to attack an enemy. Based on this scene,

   a. List down four (4) principles of animation that you may find. [4 marks]

   b. Based on the principles of animation that you have listed down, choose three (3) and provide explanations on how the principles are applied to the scene. You may also provide sketches to support your explanation.

[6 marks]

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